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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,467	07/11/2003	Brian V. Jenkins	7701	3252

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EXAMINER	
MCKANE, ELIZABETH L	

ART UNIT	PAPER NUMBER
1797	

MAIL DATE	DELIVERY MODE
08/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/617,467	JENKINS ET AL.	
	Examiner	Art Unit	
	ELIZABETH L. MCKANE	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Declaration

1. The Declaration filed on 7 May 2009 under 37 CFR 1.131 is sufficient to overcome the Davis et al. reference.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10 and 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher et al. (US 6,762,832) in view of Rao et al. (US 5,278,074), Jenkins et al. (US 5,922,606), and Moeggenborg et al. (US 6,060,318).

Fisher et al. teaches the inclusion of a corrosion inhibitor, particularly an aromatic triazole such as benzotriazole and tolytriazole, in aqueous systems including treatment baths for copper-containing semiconductors or circuits. See col.3, lines 12-28. The concentration of corrosion inhibitor present is monitored by a UV spectroscopic system and feedback control is actuated based on the monitored concentration. See col.8, lines 7-10. Flow-through sample cells are provided at a plurality of locations in the aqueous system with pump and valve means being provided for the controlled

introduction of fluids and corrosion inhibiting solutions based on the monitored concentrations. Sampling from the system can be performed continuously. Precise control of the desired concentration of the corrosion inhibitor is achieved with the monitoring and feedback control disclosed. Fisher et al. is silent with respect to a flowcell or fluorometrically monitoring the concentration of inhibitor using a fluorometer having a xenon flashlamp light source.

Rao et al. teaches substituting a fluorometric monitoring system for spectroscopic systems used to monitor corrosion inhibitor concentrations in copper-containing aqueous systems -- those inhibitors preferably including aromatic azoles such as benzotriazole and tolytriazole. Rao et al. teaches that azoles are inherently fluorescent and that a fluorescent monitoring system is more accurate and more effective than a spectroscopic system whose radiation acts to degrade the corrosion inhibiting composition, and thus provides more accurately controlled dosing of the inhibitor. Monitoring with the fluorescent system can occur either intermittently or continuously. Rao et al. further teaches the provision of a sidestream from the aqueous system being monitored and pump and valve means to actuate the responsive dosage control. See col. 1, lines 11-51; col. 5, line 55 through col. 6, line 21; and col. 11, lines 10-30.

It would have been obvious to one of ordinary skill in the art to substitute the fluorescent measurement/monitoring system of Rao et al. for the spectroscopic monitoring system of Fisher et al. since Rao et al. discloses that the fluorescent system does not degrade the preferred corrosion inhibitors and in fact, utilizes their inherent characteristics for more accurate concentration readings.

Jenkins et al. discloses the well-recognized dependence of fluorescence on both temperature and pH in systems providing chemical analysis based on fluorescence. See col. 4, lines 1-10. Jenkins et al. also discloses use of the fluorescence system in an ultrapure water bath (col.11, line 1) and a continuous flow of the water being tested through a fluorometer flow cell. See col. 11, lines 26-31.

It would have been obvious to provide means to compensate for measured temperature and pH in the system to optimize the accuracy of the fluorescence measurement, in view of the known and expected dependence of fluorescence on both temperature and pH, as disclosed by Jenkins et al..

Moreover, one would have found it obvious to apply the method of the combination using continuous water flow through the flow cell, as taught by Jenkins et al., in order to achieve real-time results. It is noted that Fisher et al. expressly desires real-time measurements.

Moeggenborg et al. evidences that it was known in the art at the time of the invention to employ a fluorometer having a xenon flashlamp light source (the Hitachi F4500) for measuring organic molecule concentrations, albeit in a non-preferred embodiment. See col.7, lines 64-65. Regardless, as use of this type of fluorometer was already known in the art, use of such in the invention of Rao et al. would have produced predictable and expected results and thus, would have been obvious.

With respect to claims 4-6 specifically, both Fisher et al. and Rao et al. teach application and monitoring of the inhibitor having concentration within the instantly

claimed ranges. See col. 11, lines 54-56 of Rao et al., and col. 7, lines 50-55 of Fisher et al..

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH L. MCKANE whose telephone number is (571)272-1275. The examiner can normally be reached on Mon-Fri; 5:30 a.m. - 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth L McKane/
Primary Examiner, Art Unit 1797

elm
8 August 2009